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10/790,525	03/01/2004	John R. Rosenlof	TI-36348	2775

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EXAMINER	
YOUNG, JANELLE N	
ART UNIT	PAPER NUMBER
2618	
NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)
	10/790,525	ROSENLOF ET AL.
	Examiner	Art Unit
	Janelle N. Young	2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed June 11, 2007, with respect to the rejection(s) of claim(s) 1-33 under 35 U.S.C. 102(b) as being anticipated by Wright et al. (US Patent 6054894) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Appel et al. (US Patent 6272336), Yun (US Patent 6463295) and further in view of Wright et al. (US Patent 6054894).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appel et al. (US Patent 6272336), Yun (US Patent 6463295) and further in view of Wright et al. (US Patent 6054894).

Appel et al. discloses a power control circuit for controlling the combined effective DC bias current of a bank of parallel RF power amplifiers disposed in the transmit path of an RF transmitter. The power control circuit comprises: 1) a first signal monitor for monitoring the level of a modulated RF output signal; and 2) an amplifier bias current

controller for comparing the modulated RF output signal level and a known maximum output power parameter of the active RF power amplifiers to determine if the active RF power amplifiers are operating in the linear region. If the active RF power amplifiers are operating in or near the nonlinear region, the power control circuit enables one or more inactive RF power amplifiers to increase the effective combined DC bias current and linearity of the active RF power amplifiers. Conversely, if the active RF power amplifiers are operating well within the linear region, the power control circuit may disable one or more active RF power amplifiers in order to reduce the effective combined DC bias current of the active RF power amplifiers and save power.

What Appel et al. does not explicitly teach is the determining weights; frequency offset correction; equalization; demodulation; mitigating channel interference; using a pilot tone; and in one embodiment of the present invention, signal quality estimation.

However, Yun teaches a method for ongoing power control for a communication station with a multiple antenna array, the power control using a method for signal quality estimation applicable for angle modulated signals. One aspect of the ongoing power control method is applicable for the uplink and includes separating the joint determination of a receive weight vector and ongoing power control into a receive weight vector determining part and a separate transmit power adjustment part. In one embodiments, the ongoing power control method for the downlink includes separating the joint determination of a receive weight vector and ongoing power control into a receive weight vector determining part and a separate transmit power adjustment part. The method starts with one part, for example transmit power assignment. Receive

weight vector determination is carried out with this assigned transmit power and the new weights used. An estimate of the resulting received signal quality is obtained and used for new ongoing power adjustment. Another aspect is applicable for the downlink and includes one aspect of the ongoing power control method is applicable for the uplink and includes separating the determination of a complete transmit weight vector including the vector of relative transmit weights and the scaling to use with the relative transmit weights into a part for determining a set of relative transmit weights and a separate transmit power adjustment part that determines the scaling factor.

What Appel et al. and Yun do not explicitly teach is the correcting impairments; a phase imbalance; and adjusting for any bulk gain mismatch.

However, Wright et al. discloses the mismatch correction and a control that can adjust one or both of I and Q signal components; correcting impairments; and reducing distortion. The inventive LINC amplifier provides substantially linear amplification from two nonlinear amplifiers by decomposing the original signal into two constant amplitude envelope, phase varying signals, which, when combined, constructively and destructively interfere to re-form the original signal. The output of the LINC amplifier, which is to be transmitted via an antenna, is an amplified form of the original signal. The inventive LINC amplifier utilizes a digital control mechanism to control and adapt a digital compensation network that directly compensates for the imperfections of the analog RF environment, including the amplifiers. The mechanism monitors the combined amplifier output and adjusts the signal components in order to precisely compensate for any differences in the characteristics of the separate signal paths which

would cause the combination not to accurately represent the original signal. The mechanism also corrects the component signals using information which can be applied to the amplifiers independent of the signal to be transmitted.

It would have been obvious to one of ordinary skill of the art at the time the invention was made to incorporate a network that employs power control system, as taught by Yun, in the traffic-weighted closed loop power detection system of Appel et al., because Appel et al. already teaches a power control circuit for controlling the transmitter output signal; correction systems; in-phase and quadrature signal; and compensation of power level (Abstract of Appel et al.).

The motivation of this combination would adjusts the power reference signal to compensate for changes in operating temperature and/or frequency and reduce power consumption, as taught by Appel et al. in Col. 10, lines 15-35, in order to maintain constant gain in the transmit path. In addition, the power control would compensate the initial power control and ongoing power control. In initial power control, the goal is to initiate communications with the minimal level of power necessary to achieve an acceptable level of communications. Ongoing power control maintains minimum transmitted power usage on a link as the communication system changes over time by new links being formed while others are being established (Col. 1, lines 42-50 of Yun). With the power amplifier bias or power amplifier enable control signal unaffected by the distortion and the amplifiers can be smaller, cooler, more power efficient and less expensive. The preferred method of signal generation is to use digital techniques as much as possible to reduce distortions (Wright et al.). Appel et al., Yun, and Wright et

al. each teach power amplifiers to compensate and/or reduce distortions/spikes in signal paths for a communication system.

As for claim 1, Appel et al. teaches a correction system comprising:

a power detector that provides an indication of power associated with a transmitter output signal (Abstract; Col. 1, lines 7-10; Col. 6, lines 10-30; Col. 6, line 66-Col. 7, line 14; and Col. 7, lines 46-65 of Appel et al.); and

a compensation system that employs the indication of power to compensate for at least one transmitter impairment affecting the transmitter output signal (Col. 6, line 66-Col. 7, line 14 of Appel et al.).

As for claim 2, Appel et al. teaches a correction system comprising: the compensation system being configured to selectively adjust at least one of an in-phase (I) signal component and a quadrature (Q) signal component based on the indication of power to mitigate distortion characteristics in the transmitter output signal (Col. 7, line 65-Col. 9, line 45 of Appel et al.).

As for claim 3, Appel et al. teaches a correction system comprising: the indication of power further comprising a relative power measured by the power detector associated with the respective I and Q signal components (Col. 7, line 65-Col. 9, line 45 of Appel et al.).

As for claim 4, Appel et al. and Wright et al. teach a correction system comprising: the compensation system further comprising a carrier correction system that adjusts DC offset of at least one of an in-phase (I) signal component and a quadrature (Q) signal component utilized to provide the transmitter output signal based

on the indication of power to mitigate spikes in the carrier level of the transmitter output signal (Col. 7, line 65-Col. 9, line 45 of Appel et al. with respect to Col. 7, lines 22-65; Col. 8, lines 3-27; Col. 14, line 38-Col. 15, line 5; and Col. 37, line 66-Col. 38, line 9 of Wright et al.).

As for claim 5, Yun teaches a correction system comprising: the compensation system further comprising an equalization system that adjusts tones in a signal spectrum employed to provide the transmitter output signal so that the signal spectrum has a desired spectral shape, the equalization system adjusting the tones in the signal spectrum during calibration based on the indication of power (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun).

As for claim 6, Yun teaches a correction system comprising: the equalization system selectively weighting tones in the signal spectrum based on an indication of power associated with the tones in the signal spectrum relative to an indication of power associated with a reference tone in the signal spectrum (Col. 16, lines 15-55 and Col. 18, line 58-Col. Col. 19, line 50 of Yun).

As for claim 7, Yun teaches a correction system further comprising:

a comparator that compares a power characteristic associated with each of the tones in the signal spectrum relative to a power characteristic of the reference tone to provide an indication of relative power for each respective tone (Col. 16, lines 15-55 and Col. 18, line 58-Col. Col. 19, line 50 with respect to Col. 23, line 58-Col. 24, line 20 of Yun); and

a weighting function that employs the indication of relative power for each respective tone to adjust each respective tone to a desired level relative to the reference tone (Col. 10, line 3-Col. 11, line 39 of Yun).

As for claim 8, Yun teaches a correction system comprising: the weighting function being applied to adjust at least one of the I-signal component and the Q-signal component of the transmitter output signal to provide the desired spectral shape (Col. 37, line 31-Col. 38, line 31 of Yun).

As for claim 9, Appel et al. teaches a correction system comprising: further comprising a detector bias component configured to determine a DC bias associated with operation of the power detector, the compensation system employing the DC bias to mitigate effects of the DC bias in the indication of power (Abstract and Col. 6, line 56-Col. 7, line 40 of Appel et al.).

As for claim 10, Appel et al. teaches a correction system comprising: the compensation system is operative to adjust at least one of an in-phase (I) signal component and a quadrature (Q) signal component based on the indication of power to compensate for at least one of a gain and phase mismatch between a signal path for the I-signal component and a signal path for the Q-signal component (Col. 7, line 65-Col. 9, line 45 of Appel et al.).

As for claim 11, Wright et al. teaches a correction system comprising: further comprising a mismatch correction system operative to ascertain an indication of at least one of a gain and phase mismatch between an in-phase (I) signal component and a quadrature (Q) signal component based on the indication of power, the mismatch

correction system adjusting at least one of the I-signal component and the Q-signal component based on the indication of the mismatch between I and Q signal components (Col. 13, lines 36-51 and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

As for claim 12, Appel et al. teaches a correction system comprising: the mismatch correction system further comprising: a comparator that compares the indication of power associated with the I-signal component and the indication of power associated with Q-signal component to provide an indication of relative power characteristics corresponding to the mismatch associated with a signal path for the I-signal component and a signal path for the Q-signal component and a control operative to adjust at least one of the I and Q signal components based on the indication of the relative power characteristics (Col. 7, line 46-Col. 10, line 4 of Appel et al.).

Regarding claim 13, see explanation as set forth regarding claim 1 (system claim) because the claimed integrated circuit for a correction would perform the system steps.

As for claim 14, Appel et al. teaches a communications apparatus comprising: a baseband system that provides in-phase (I) and quadrature (Q) signal components; a correction system associated with the baseband system for adjusting at least one of the I and Q signal components based on an indication of power of a transmit signal to compensate for impairments associated with the communications apparatus; a transmitter that provides the transmit signal based on the adjusted I and Q signal components; and a power detector that detects power associated with the transmit

signal and provides the indication of power (Abstract and Col. 7, line 46-Col. 10, line 45 of Appel et a).

As for claim 15, Wright et al. teaches a communications apparatus comprising: the correction system further comprising a carrier correction system that adjusts a level of at least one of the I and Q signal components based on the indication of power to compensate for an impairment associated with the communications apparatus that affects a level of the carrier signal in the transmit signal (Col. 8, lines 3-27 and Col. 37, line 66-Col. 38, line 9 of Wright et al.).

As for claim 16, Yun teaches a communications apparatus comprising: the correction system further comprising an equalization system that adjusts tones in a signal spectrum corresponding to the transmit signal based on the indication of power so that the signal spectrum has a desired spectral shape (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun).

As for claim 17, Yun teaches a communications apparatus comprising: the equalization system selectively weighting tones in the signal spectrum based on an indication of power associated with the tones in the signal spectrum relative to the indication of power associated with a reference tone in the signal spectrum (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun).

As for claim 18, Wright et al. teaches a communications apparatus comprising: the correction system further comprising a of Wright et al. correction system operative

to ascertain, based on the indication of power, an indication of mismatch associated with a signal path for the I-signal component and a signal path for the Q-signal component, the mismatch correction system adjusting at least one of the I-signal component and the Q-signal component based on the indication of the mismatch between I and Q signal components (Col. 13, lines 36-51 and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

As for claim 19, Wright et al. teaches a communications apparatus comprising: wherein the mismatch further comprises at least one of a phase imbalance and a gain mismatch caused by circuitry in the signal path for the I-signal component and the signal path for the Q-signal component (Col. 7, lines 40-65 and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

Regarding claim 20, see explanation as set forth regarding claim 14 (apparatus claim) because the claimed integrated circuit for a correction would perform the apparatus steps.

As for claim 21, Appel et al. teaches a transmitter system comprising:

means for determining an indication of power associated with a transmit output signal (Abstract; Col. 1, lines 7-10; Col. 6, lines 10-30; Col. 6, line 66-Col. 7, line 14; and Col. 7, lines 46-65 of Appel et al.); and

means for compensating for distortion in the transmit output signal based on the indication of power (Col. 7, line 65-Col. 9, line 45 of Appel et al.).

As for claim 22, Yun teaches a transmitter system further comprising: means for shaping a signal spectrum in the transmit output signal by adjusting at least one of an

in-phase (I) signal component and a quadrature (Q) signal component based on the indication of power (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun).

As for claim 23, Wright et al. teaches a transmitter system further comprising: means for, based on the indication of power, compensating for at least one of gain and phase mismatch associated with an in-phase signal path and a quadrature signal path of the transmitter system (Col. 13, lines 36-51 and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

As for claim 24, Appel et al. and Wright et al. teach a transmitter system further comprising: means for mitigating spikes in a carrier signal of the transmit signal by applying a DC signal to, based on the indication of power, adjust at least one of an in-phase (I) signal component and a quadrature (Q) signal component (Col. 7, line 46-Col. 10, line 4 of Yun in correspondence with Col. 7, lines 22-65; Col. 8, lines 3-27; Col. 13, line 52-Col. 14, line 3; Col. 24, lines 39-63; and Col. 44, line 57-Col.45, line 13 of Wright wt al.).

As for claim 25, Wright et al. teaches a transmitter system comprising: wherein the impairments comprise at least one of spikes in a carrier signal of the transmit signal, attenuation distortion in a signal spectrum corresponding to at least a portion of the transmit signal, a gain mismatch associated with an in-phase (I) signal path and a quadrature (Q) signal path, and a phase mismatch associated with the I-signal path and the Q-signal-path (Col. 7, lines 40-65 and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

As for claim 26, Wright et al. teaches a transmitter system further comprising: means for calibrating the means for compensating to mitigate the impairments (Col. 31, lines 30-53 and Col. 31, line 66-Col. 32, line 17 of Wright et al).

As for claim 27, Yun and Wright et al. teach a transmitter system comprising: the means for calibrating further comprising:

means for providing at least one calibration tone having an I-signal component and a Q-signal component (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun in correspondence with Col. 7, lines 40-65 and Col. 42, line 56-Col. 43, line 48 of Wright et al.); and

means for adjusting at least one of the I-signal component and the Q-signal component based on the indication power, the means for compensating employing the adjusted at least one of the I-signal component and the Q-signal component to mitigate the impairments (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun in correspondence with Col. 12, line 50-Col. 13, line 35 and Col. 42, lines 26-42 Wright et al.).

As for claim 28, Appel et al. teaches a method to correct impairments associated with a communications apparatus, the method comprising:

detecting an indication of power associated with a transmit signal (Abstract; Col. 1, lines 7-10; Col. 6, lines 10-30; Col. 6, line 66-Col. 7, line 14; and Col. 7, lines 46-65 of Appel et al.); and

selectively adjusting at least one of an in-phase (I) signal component and a quadrature (Q) signal component based on the indication of power to compensate for impairments associated with the communications apparatus that affect the transmit signal (Col. 7, line 65-Col. 9, line 45 of Appel et al.).

As for claim 29, Appel et al. and Wright et al. teach a method to correct impairments associated with a communications apparatus, further comprising applying a DC offset for at least one of the I-signal component and the Q-signal component to mitigate spikes in a carrier for the transmit signal (Col. 7, line 65-Col. 9, line 45 of Appel et al. with respect to Col. 7, lines 22-65; Col. 8, lines 3-27; Col. 14, line 38-Col. 15, line 5; and Col. 37, line 66-Col. 38, line 9 of Wright et al.).

As for claim 30, Wright et al. teaches a method to correct impairments associated with a communications apparatus, further comprising adjusting at least one of the I-signal component and the Q-signal component based on the indication of power to mitigate at least one of gain and phase mismatches associated with an I-signal path and a Q-signal path to which the respective I-signal component and the Q signal component are provided (Col. 7, lines 40-65 and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

As for claim 31, Wright et al. teaches a method to correct impairments associated with a communications apparatus, further comprising:

determining an indication of a phase imbalance associated with the I-signal path and the Q-signal path (Col. 6, lines 7-28; Col. 8, lines 3-28; Col. 1, line 52-Col. 14, line 3; Col. 14, lines 39-50; Col. 24, lines 39-63; Col. 34, lines 15-36; Col. 37, line 66-Col. 38, line 9; and Col. 45, lines 35-58 of Wright et al.);

determining an indication of a gain mismatch associated with the I-signal path and the Q-signal path (Col. 13, lines 36-51 and Col. 42, line 56-Col. 43, line 48 of Wright et al.); and

calibrating the adjustments to the at least one of the I-signal component and the Q-signal component based on the indication of the phase imbalance and the indication of the gain mismatch (Col. 7, lines 40-65; Col. 13, lines 36-51; and Col. 42, line 56-Col. 43, line 48 of Wright et al.).

As for claim 32, Yun teaches a method to correct impairments associated with a communications apparatus, further comprising applying weight factors to at least one of the I-signal component and the Q-signal component for tones that form a signal spectrum of the transmit signal for adjusting a spectral shape of the transmit signal (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun).

As for claim 33, Yun teaches a method to correct impairments associated with a communications apparatus, further comprising determining a weight factor for each of the tones based on an indication of power associated with each respective one of the tones relative to an indication of power associated with a reference one of the tones (Col. 27, lines 17-38; Col. 31, lines 30-53; Col. 35, lines 30-54; Col. 36, lines 11-30; and Col. 45, lines 26-31 & 35-58 of Yun).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brown et al (US Patent 6366622) discloses an apparatus for receiving signals includes a low noise amplifier (LNA) configured to receive a radio frequency (RF) signal. An I/Q direct down converter is coupled to the LNA. The I/Q direct down converter is configured to split the RF signal into real and imaginary components and to down convert the real and imaginary components directly to baseband signals. A local oscillator (LO) is coupled to the I/Q direct down converter and is configured to drive the I/Q direct down converter. First and second filters are coupled to the I/Q direct down converter. The first and second filters are configured to filter the down converted real and imaginary components, respectively. First and second analog-to-digital converters (ADCs) are coupled to the first and second filters, respectively. The first and second ADCs are configured to convert the real and imaginary components into digital signals. The first and second ADCs have a dynamic range that is wide enough to convert the filtered, down converted real and imaginary components to digital signals without using variable gain on the filtered and down converted real and imaginary components. An apparatus for use in wireless communications includes a radio, a modem and a controller integrated onto a single integrated circuit (IC). The radio includes a receiver for receiving data and a transmitter for transmitting data. The modem is coupled to the radio and is configured to demodulate received data and modulate data for transmission. The controller is coupled to the modem and includes a digital interface for

external communications through which received data and data for transmission is sent, a connection state machine configured to accept commands through the digital interface and to respond to the commands by initiating a sequence, and a receive/transmit state machine configured to perform state control of the radio in response to the initiated sequence.

Kuirir et al. (US Pub 2002/0102941) discloses a method and device for avoiding adjacent channel interference and reducing disconnections caused thereby, during communication between a mobile device and a base station in a wireless telecommunications network. The mobile device measures the strength of a received signal before the signal enters one or more selected filters, and compares the strength of the signal after the filtering, in order to estimate a power ratio of the adjacent channel interference to communication channel power. If the power ratio is greater than a threshold, then a handover is requested to an alternative communication channel available between the mobile device and either the base station or another base station.

Chen et al. (US Pub 2003/0130002) discloses a power control system for use in facilitating transition to an active state suitable for use in a wireless communication system. In one aspect, the system includes a first transceiver, such as a BTS, having the ability to initiate transmission of a power control function. The transceiver comprises a generator for generating a power control arrangement and a transmitter for transmitting the power control arrangement. The system further includes a second transceiver, such as a terminal, for receiving the power control arrangement and coherently combining the power control arrangement to determine a state transition

indication. The second transceiver includes a transmitter that transmits a selected waveform subsequent to the coherent combining. The first transceiver receives the selected waveform, determines a power level associated therewith, and provides feedback to the second transceiver. The power control arrangement may include groups of redundant power control data, data transmitted on idle feedback dimensions, or predetermined signal patterns in addition to at least one power control group.

Kumar (US Pub 2004/0223553) discloses a method and system for the wireless radio-frequency (RF) transmission and reception of an audio signal use a substantially over sampled and low bit-weight digital word representation. An analog electrical signal, representing acoustic audio information, is digitized with a high-precision delta-sigma modulator without corresponding decimating low pass filter. The delta-sigma modulator output is a sequence of single bit words. Each bit is unweighted or equally weighted. The words are generated at a frequency that substantially exceeds the critical (Nyquist) sampling frequency, so that the signal is substantially over sampled. The over sampled and low bit-weight digital word representation minimizes the complexity and power consumption of analog-to-digital conversion, which facilitates mobile or portable use with long battery life. The corresponding digital decimating low pass filter is implemented in the receiver system, when necessary.

Uehara et al. (US Patent 6909881) discloses a base station transmits downlink signals to mobile terminals of users A to C with respective transmission power corresponding to downlink quality. A downlink quality estimating section (106) uses the transmission power from a transmission power control section to compare transmission

power between the users, and estimates that a terminal with low transmission power has high downlink quality. The priorities are determined so that the priority is increased as the transmission power is lower. Thus determined priority information is output to a scheduling section (107). The scheduling section (107) performs scheduling based on the priority information. The section (107) assigns DSCH to terminals in ascending order of transmission power. User A is first assigned DSCH, user B is second assigned DSCH, and user C is third assigned DSCH. It is thus possible to perform scheduling and MCS selection of DSCH with the need of information from a terminal eliminated.

Wilson (US Patent 7010280) discloses a transmitter circuit means is arranged to provide linear amplification of non-constant envelope modulated RF signals by directly amplitude modulating the transmitter power amplifier with the amplitude component of the baseband signal. In addition, the signal to be transmitted is phase modulated by the In-phase and quadrature components of the baseband signal, and synchronization means arc provided in order to correct any time slippage between the directly applied amplitude modulation and the phase modulation. The modulation synchronization correction contributes significantly to the linearity of the transmitter.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle N. Young whose telephone number is (571) 272-2836. The examiner can normally be reached on Monday through Friday: 8:30 am through 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JNY
August 22, 2007

NAY MAUNG
SUPERVISORY PATENT EXAMINER